

<b>Title</b>		ASA-CSSA-SSSA Annual Meetings - October 21 - 25, 2001 - Charlotte, NC	
Dynamic Cropping Systems: Economics and Crop Sequences			
<b>TSNo</b>	a08-tanaka205125-P	<b>PaperType</b>	P
<b>Authors</b>			
D.W.	ARCHER*	USDA-ARS, MORRIS, MN	
D.L.	TANAKA		
J.M.	KRUPINSKY		
S.D.	MERRILL		
R.E.	RIES		
J.R.	HENDRICKSON		
M.A.	LIEBIG		
J.D.	HANSON	USDA-ARS, MANDAN, ND	
<b>Keywords</b>			
NET RETURNS		PRODUCTION COST	
PROFIT		CROP ROTATION	
<b>abstract</b>			
<p>Economic returns in cropping systems are greatly affected not only by what crops are grown, but also the sequence in which they are grown. Crop sequence affects soil water availability, and weed and disease pressures, which in turn affect crop yields and production costs. Many producers no longer follow a set rotational pattern, and make cropping decisions on an annual basis depending on current crop prices. While the flexible approach can lead to economic improvements, there are potential economic costs as well. A field study was initiated at Mandan, ND in 1998 to determine the sequence crops should follow. The study generated two years of data on the effect of ten crop residues on ten crops. Previous crop residues had a significant effect on crop yields, and consequently had a significant effect on net returns. Average net returns for a single crop varied by as much as \$226 per hectare depending on the previous crop residue, indicating the importance of accounting for crop sequence in making cropping decisions. For 6 of the 10 crops, average net returns were lowest for crops grown on their own residue. A simple dynamic optimization model was developed to compare net returns as a producer's planning horizon was extended. The model showed that accounting for successive crop sequence effects can lead to further improvements in net returns.</p>			
<b>For more information, please contact:</b>			
DONALD TANAKA 701 667-3063 tanakad@mandan.ars.usda.gov			